

ATTACHMENT - REMARKS

By this Amendment, independent claim 1 has been amended for clarity and to better define the invention. Other dependent claims have also been amended consistent with the changes to independent claim 1 and/or for clarity. It is submitted that the present application is in condition for allowance for the following reasons.

In the *Specification* section of the Detailed Action, the examiner has objected to the specification for lacking "appropriate section headings". While the examiner has noted that this "preferred" layout of a US specification, the use of section headings is not mandatory, only "suggested". Therefore, as the present specification does generally have the suggested layout, and in view of the burden required to add headings, applicant declines to add the "suggested" headings.

In the following *Claim Rejections - 35 USC § 112* section of the outstanding Office Action, independent claim 1 and dependent claims 2-4 were all rejected as being indefinite. In generally, the claims have now been amended for better clarity, and to overcome the noted problems in a self-evident manner. However, the following will be noted.

Claim 1. The noted problems of claim 1 were the result of a scanning error, where portions of original claim 1 were inadvertently left out of the "currently amended" claim 1 set forth in the Preliminary Amendment filed initially with the application. Those left out portions, with some minor corrections or additions for clarity, are now placed back in the presently amended claim 1 and can be found starting at the end of the "sending" step and continuing with the beginning of the "transforming" step.

Claim 3. The equation has been revised to show multiplication operators between the symbols in a self-evident manner. However, it will be appreciated that there is no mathematical difference between " $0_i \cdot P/r$ ", " $0_i \cdot (P/r)$ " or " $(0_i \cdot P)/r$ ", so the first noted term has been used.

In view of the above and the other corrections made to the claims, it is submitted that the indefiniteness rejection has been overcome.

In the *Claim Rejections - 35 USC § 103* section, independent claim 1 and dependent claims 2-3 were all rejected as being obvious over OHTA (EP 0617919) in view of BERGENEK (USP 2002/050713). However, for the following reasons, it is submitted that these claims are all allowable over this combination of references.

Initially, it should be appreciated that the present invention relates to identification of a person by recognition of a fingerprint (or toeprint) of that person. However, it must be understood that the fingerprint is not detected directly from the finger of that person. Rather, the detection is made from a mark (or part of a mark) of a fingerprint of the person which is located on a rounded face of a support, such as a rounded piece of furniture, a tool handle, a door handle, a door key, a barrel of a gun, etc. Thus, the person is not physically present when the method according to the invention is used. In particular, it is anticipated that the method according to the invention will be principally used by police in order to identify a person from a fingerprint mark (or part of fingerprint mark) which has been found on the rounded face of a support.

This situation is quite different from the situation where a direct detection of a fingerprint on a finger is used so as to identify that person and to authorize an operation for that person such as entry to a space or use an apparatus (e.g., computer). Such a

situational difference is fundamental, because the conditions of forming and reading of the fingerprint image are different in both cases: a digital photograph of a fingerprint mark in the situation of the present invention; versus an opto-electronic imaging (or the like) in the case of a direct detection of a fingerprint on the finger placed against the detector.

Overall, the geometrical configuration of the surface to be investigated is very different in both cases. In the case of the present invention, the surface having the mark of the fingerprint has a very short curvature radius, so that the fingerprint mark to be detected is curved with a very short curvature radius. Under these particular circumstances, the method according to the present invention is conveniently used to compensate for the distortion caused by the curved surface on which the fingerprint mark is located. Contrarily, in the case of a direct detection on a finger, the surface on which the finger has to be applied is substantially flat or is very little curved with a very long curvature radius and distortion is (by design) not an issue.

OHTA relates to an optical imaging device arranged for a direct detection on the physical hand of a person. In particular, this generally known device is not provided for receiving just one finger on an associated platen, but rather it is arranged so that the full palm of one hand is applied on the associated platen so that ridges of the palm are also detectable. While typical prior art optical imaging devices are provided with a substantially flat platen (face of a prism, generally) for affixing one finger, the device OHTA is advantageously provided with a platen which is curved and convex so that the palm of the hand will have a mating contact the platen surface. However, this convex affixing face of the platen has a predetermined constant shape and curvature, and

furthermore is only slightly curved with a very long curvature radius. Finally, OHTA does not suggest in any way to select a pre-established model of curved surfaces based on a shape of surface on which the print is located, nor to detect respective positions of two diametrically opposed generatrices visible in the digitized image so as to allow an algorithm processing device to be implemented.

Consequently, the invention as recited in the claims, and particularly in amended claim 1, is in a technical field whose application is quite different from the pre-determined and completely known surface of the platen of OHTA, and those features of the invention recited in amended claim 1 are neither disclosed, nor suggested, in OHTA.

BERGENEK relates to a process for discriminating between a physical fingerprint pressed onto a detector surface to be sensed and a latent fingerprint (just) left on the detector surface. This known method detects the location of a currently recorded fingerprint on the detector surface, and compares it with the location of a previously recorded fingerprint on the detector surface. If the locations of both detections correspond one with the other, then the latter one is a latent fingerprint left on the detector surface and the latent fingerprint is consequently rejected.

BERGENEK does not suggest in any way to select a pre-established model of curved surfaces, nor to detect respective positions of two diametrically opposed generatrices visible in the digitized image so as to allow an algorithm processing device to be implemented. Furthermore, BERGENEK would have limited applicability to OHTA, since OHTA utilizes a hand-shaped depression which is designed to locate the hand and fingers of the user therein, and hence detection is designed to occur in approximately the same place each time with little variance.

Consequently, the invention such as recited in appended amended claims, particularly in amended claim 1, has almost nothing in common with BERGENEK, and the relevant features of the invention recited in amended claim 1 are neither disclosed nor suggested in BERGENEK in any event.

In view of above comments regarding both OHTA and BERGENEK, it is clear that neither OHTA nor BERGENEK individually discloses to select a pre-established model of curved surfaces, nor to detect respective positions of two diametrically opposed generatrices visible in the digitized image so as to allow algorithm processing device to be implemented. Consequently, it is also apparent that a combination of OHTA with BERGENEK cannot lead a person skilled in the art to the main features of the invention as recited in amended claim 1; and in particular to a method having the steps of selecting a pre-established model of curved surfaces, and of detecting respective positions of two diametrically opposed generatrices visible in the digitized image so as to allow algorithm processing device to be implemented.

Therefore, for all of the foregoing reasons, it is submitted that amended independent claim 1 is not made obvious by a combination of OHTA and BERGENEK, so that claim 1 is now allowable over this combination of references. And for at least these same reasons, it is submitted that claims 2-3 dependent from claim 1 are likewise allowable.

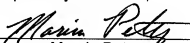
It is also noted that there was no art rejection of dependent claim 4, so claim 4 remains allowable on its own as well as for the same reasons as claim 1 from which it depends.

For all of the foregoing reasons, it is submitted that the present application is in condition for allowance and such action is solicited.

Respectfully submitted,

Date: April 15, 2009

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